Roll No ....

CS-5001-CBGS

B.E. V Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Data Communication

Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions

     ii)   All questions carry equal marks.

1. a)   Explain briefly about block codes.

   b)   Explain about lossy and lossless data compression techniques.

2. a)   Discuss about synchronous and statistical TDM.

   b)   Explain the principle of direct sequence spread spectrum technique.

3. a)   What is connecting device? How gateways are different from layer two and layer three switches.

   b)   Write advantages and disadvantages of different network topologies.

   c)   Compare and contrast between RJ-45 and RJ-11.

4. What advantage does circuit switching have over packet switching? Why it said that packet switching employ statistical multiplexing?

5. a) A bit stream 10011101 is transmitted using the standard CRC method described in the text. The generator polynomial is x3+1. Show the actual bit string transmitted. Suppose the third bit from the left is inverted during transmission. Show that this error is detected at the receiver's end.

   b) If the 7bit Hamming code word received by receiver is 1011011. Assuming the even parity, state whether the received code word is correct or wrong. If wrong locate the bit in error.

6. Four 1 Kbps connection are multiplexed together. A unit is 1 bit. Find
   i) The duration of 1 bit before multiplexing
   ii) The transmission rate of link
   iii) The duration of time slot and
   iv) The duration of a frame

7. a) Distinguish between forward error correction versus error correction by retransmission?

   b) How is the simple parity check related to the two-dimensional parity check? Explain with example.

8. Write short notes on any two:
   a) X.25
   b) Convolution Codes
   c) Hamming Codes

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